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PROGRAM DESCRIPTION

WS 117L, ADVANCED RECONNAISSANCE SYSTEM

THOR-DISCOVERER, SENTRY, MIDAS, GAMBOOSE

In accordance with ARPA directives of December 1958, this program, originally known as the Advanced Reconnaissance System or WS 117L, has been reoriented and split into four programs. Development plans for these programs have been prepared. Basic reasons for the split, according to ARPA, are funding and management considerations.

The Programs:

1. THOR-DISCOVERER. THOR-boosted satellites on a low altitude (150 n.m.-nominal) polar orbit, launched from Vandenberg. Launches to start in January 1959. Purpose of flights is to prove orbital capability, engineering testing and evaluation of components, scientific data gathering, and biomedical experiments. Flights will have recoverable capsules, which the satellite will eject, to be picked up by C-119 air recovery teams in the vicinity of Hawaii, on the 17th orbit. Satellite tracking stations located in Alaska, California,

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and Hawaii will be used for all phases of the program. Total of 19 flights authorized in 1959 :

13 are ARPA funded.

2 are ARPA funded, payload not specified.

4 are Air Force funded.

2. SENTRY. ATLAS-boosted photo reconnaissance satellite, with higher orbits than DISCOVERER and with research and development payloads. Readout program (visual and electronic ferret) and recoverable capsule program and a mapping capability with high accuracy and long focal length, high-resolution package are planned. Flights start: Readout version, March 1960; recoverable version, January 1961.

3. MIDAS, Missile Defense Alarm System. ATLAS-boosted infrared attack alarm, formerly carried as subsystem "G" of WS 117L. To be performed in phases. Phase I begins in November 1959 with 4 flights from Patrick (ARPA funding with AF assistance). Phase II begins in July 1960 with 6 flights from Vandenberg (AF funding with ARPA assistance). Phase III (all AF funded) begins the operational

phase. Launches from Vandenberg beginning in July 1961 at the rate of 2-3 a month until 30 are on orbit, after which this total will be maintained.

4. CAMEL. Short time span, AF satellite program with special payloads. Launches from Vandenberg will be THOR-boosted with recoverable capsules, designed to provide the AF with experience. Schedule starts in April 1960, at rate of 2 per month until a total of eight flights are made. An AF funded program.

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Program Objectives, [redacted]

A vital requirement for the defense of the United States is the earliest possible warning of a Soviet intention to attack. This system, employing an orbiting satellite, will provide at a reasonably early date, surveillance of the whole Soviet complex. The use of varied sensing devices in the satellite system will reveal Soviet preparations for a possible attack well in advance of the event.

Timeliness of receipt of the intelligence information is essential, with daily reconnaissance coverage at high resolution the ideal. In consideration of the requirement for earliest availability of the Advanced Reconnaissance System, the engineering progression and Air Force acceptance will be from the lesser to the greater resolution.

Information from surveillance satellites will be integrated into the USAF Intelligence Data Handling System and disseminated to operational military agencies. Wide band, high speed transmission will be used.

It is expected that equipment will permit the following:

Terrain and mapping coverage.

Detection of new and hitherto unknown targets and verification of known targets.

Determination of electronic signal characteristics.

Location of targets and defenses.

Collection of data on technological improvements.

Evaluation of military and industrial strength.

Monitoring of electronic emissions.

Surveillance of enemy build-up indications.

Warning of attacks under way or pending.

Assessment of high-yield weapons' damage.

Reconnoitering of military movements.

Location of Naval forces throughout the world.

Collection of world-wide weather data. (Primarily Cloud Cover)